

ABSTRACT

Methods and pharmaceuticals for inhibiting or preventing metastasis formation in
5 animals, including humans, having primary tumors, through the administration of
phosphorothioates including their thiol and disulfide metabolites are disclosed. These
compounds stimulate angiostatin levels, inhibit matrix metalloproteinases (MMPs), and
stimulate manganese superoxidase dismutase (MnSOD). Phosphorothioates, of which
10 amifostine is an example, can be administered as a combination therapy with traditional
cancer therapies, including chemotherapy, radiotherapy, surgery, immunotherapy,
hormone therapy and gene-therapy. Inhibition or prevention of metastasis by
phosphorothioates is independent of tumor type, including adenocarcinomas and
sarcomas.